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REVERSIBLE PLATE HOLDER

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

[0001] This invention is in the field of holders for plates and more particularly holders for inexpensive readily bendable disposable paper plates or plate liners which can easily tip or deform in use causing spills of the food, such plate holders being applicable for plates and liners used by both persons and pets.

PRIOR ART

[0002] Plate holders are known, particularly for pets and infants who are likely to tip or overturn plates from which they are eating. Such plate holders are typically bowl-like articles with an open top to hold a plate and a wide base to provide stability against tipping. It is common to use removable or disposable plate liners that contain the food and sit in a top recess of the plate holder. Plate liners usually have side walls inclined upwardly and outwardly for reasons of functionality, strength, aesthetics and because such is most suitable for efficient manufacture. Plate holders for such plate liners would typically have generally conical walls that define a recess of an inverted truncated cone open and wider at the top and truncated to define a flat surface at the bottom, corresponding to the generally flat bottom of the typical plate liners.

[0003] Notwithstanding the conical recess inside walls, the outside walls of the plate holder may be vertical or inclined outward so that the base is wider than the top. Plate liners are most commonly of molded plastic or paper board or cardboard pressed to define upwardly inclined side walls with a top lip or flange. Such plate liners are supported on or in the plate liner by the top lip of the plate liner overlying and resting on a corresponding surface on the plate holder and/or

by the inclined side walls of the plate liner resting against the conical walls of the plate holder.

[0004] The use of paper plates for food service both at home for pets and for people, and in restaurants and elsewhere as at picnics and in moving vehicles is massively widespread for a variety of obvious reasons. Such plates are inexpensive and disposable so that washing, drying and storing are unnecessary. They are light weight and thus can be easily transported in standard packaged units and easily carried by persons at dining events whether they be casual meals in a cafeteria or formal events. They can be easily and inexpensively decorated in any color and design simply by printing or other graphic techniques. They can be made in a variety of sizes, styles and qualities including waterproofing.

[0005] U.S. Patent No. 5,653,362, for example, discloses a disposable pet animal feed container and holder. The liner is inserted into a holder until dimples engage the bottom end of skirt on the holder. This holder requires the structure of an internal shoulder and skirt to support the liner, and the bottom of the skirt extends into the space within the holder, thus limiting the liner to a size substantially less than the nominal diameter of the holder. There is no teaching of reversibility, and furthermore the liner would not work in the reversible orientation due to the extension of the skirt which would be likely to interfere with use in the reversed configuration.

[0006] U.S. Patent No. 1,922,992 discloses a protector ring used in a restaurant that is placed on the top of a filled plate which allows a second filled plate to rest on the top of the protector while not interfering with the presentation of food on the first plate. Thus, the top plate will not shift relative to the bottom plate when the two (or more) filled plates are carried by a waiter. Here rigid plates are placed on top of and outside the top of the ring, with no teaching or suggestion to position a paper plate to be rested inside the ring. Also, the bottom edge is a stepped-out flange with a vertical wall, while the top edge is a stepped-in flange with a vertical wall.

[0007] U.S. Patent No. 2,213,837 discloses a child's eating dish and shows several different embodiments all constructed to enable a dish to be placed within a base, made of heat insulating material, with an inner seat. Each of the configurations has a closed bottom and thus cannot be used in an inverted orientation to hold a plate.

[0008] U.S. Patent No. 2,585,445 discloses a base for supporting a drinking cup. As with U.S. Patent No. 2,213,837 described above, this base has a closed bottom and thus cannot be used in a inverted orientation to support a cup or other container of another size.

[0009] The present invention seeks to provide an improved plate holder, particularly for persons using disposable paper or plastic plates or plate liners of different sizes at different times. An object of this invention is to provide a plate holder which is a single article designed to accommodate different sized plates and liners by merely inverting the plate holder, and which will retain the characteristics of stability, support, aesthetics and economy of manufacture whether it is upright or upside down. In this application, the term plate holder is intended to mean a holder for plates or plate liners or both.

SUMMARY OF THE INVENTION

[0010] The present invention in a preferred embodiment is a reversible plate holder in the form of a circular tube open at both ends, where these ends are of different diameters and each end is tapered as a truncated cone with the diameter of the tube decreasing from the top edge downward and from the bottom edge upward. In a preferred embodiment the conical walls of the top truncated conical part flow into and are contiguous with the conical walls of the bottom truncated conical part. The bottom edge has diameter less than that of the top edge, and the central area between these opposite ends has a diameter less than the diameters of both the top and bottom edges. This plate holder is reversible so that it can hold and support paper plates of different diameters, depending on whether its orientation is upright or upside down. Also, this plate holder may have various

heights, as needed. It should be understood that this invention is a holder for plates, plated or container liners and/or other container elements, and reference made herein to one or another of these elements is intended to cover the others.

[0011] It is an object of the present invention to provide a plate holder that will not only hold, support and stabilize a paper plate, but will be reversible by a simple inversion, so that it can hold plates of different sizes. Whether for pets, at home or picnics outside or for restaurant establishments, it is believed quite practical and useful to be able to provide plate holders selectively for large and small portions. Also, the new plate holder will help retain the hot or cold temperature of the food in the plate or liner being supported. The plate holders must, of course, be quite stable from tipping or collapsing. Also, these new plate holders need to be most simple in construction to achieve minimum cost of manufacture. Typical manufacturing is by high speed injection molding if plastic, and by other molding or pressing technologies if the plate holder is made of other material.

[0012] Last, but not least, it is an object that the new plate holder be esthetically pleasing with a smooth clean appearance. In one such reversible plate holder, the tube or annulus has walls of generally uniform thickness from the top end to the bottom end. It is further preferable that the inside and outside wall surfaces be smooth and devoid of radially inward extending parts or projections. It is a further object that the outer surface be adaptable to receive graphics for advertising purposes or to present messages for other reasons.

[0013] In one preferred embodiment the new reversible plate holder, operable to hold and support selectively first and second plates of first and second diameters respectively, is defined as an annulus or tubular article having axially spaced top and bottom parts with top and bottom edges of diameters D1 and D2 respectively and a neck part of diameter D3 axially between the top and bottom parts where D1>D2 and D2>D3. In this annulus the top part has inner wall surfaces that define a truncated top cone, and the bottom part has inner wall surfaces that define a truncated bottom cone generally coaxial with the top cone,

whereby the annulus in upright position has the top cone at the top for supporting the first plate, and the annulus in inverted position has the bottom cone at the top for supporting the second plate, where the rims of the plates overlie the top and bottom edges respectively and the side walls of the plates overlie the conical wall surfaces respectively.

[0014] Accordingly, it is an object to provide a plate holder that can be used in an upright orientation for a plate of a first diameter, or inverted to be used for a plate of a second different diameter.

[0015] In each orientation the plate holder has a conical shaped inner wall to receive, support and hold the tapered outer wall of the sides or flange of a paper plate, with the outer rim of the plate overlying the terminal top or bottom edge of the annulus for further support. The plate usually has tapered side walls corresponding generally to the tapered walls of the conical surface of the plate holder; however, a plate could be adequately supported so long as at least a portion of the plate's outer surface of its side wall engages at least a portion of the plate support surface. Alternatively, the plate could be supported by the rim on the top edge of the annular plate support, but preferably the plate would be supported by both the conical walls and the rim.

[0016] In another preferred embodiment the tapered walls of the opposite conical forms join in a continuous and congruent wall which defines a smooth curved surface on the inside and on the outside of the annulus. Alternatively, the opposite conical forms may have generally straight walls which join at the central or neck part of the annulus.

[0017] As described above, the preferred embodiment is formed as an annulus or hollow tube having walls of uniform thickness; however, it is possible for the plate holder to be a solid block, either of circular or square or other shape, with a conical recess in each end, one recess having nominal diameter larger than the other. Such block could be inverted to allow selection of the opposite end to support a plate of smaller diameter. The new plate holder may be made preferably

of silicone rubber or plastic, but also of paper or cardboard material or even ceramic, wood or metal.

[0018] This invention of a plate holder is also useful as a holder for frozen foods or microwavable dishes to help stabilize them whether they are being used during eating, storage, freezing, heating or cooking.

[0019] Other objects, features and characteristics of the present invention, as well as the methods of operation and function of the related elements of the structure, and the combination of the parts and economies of manufacture, will become more apparent upon consideration of the following detailed description and appended claims with reference to the accompanying drawings, all of which form a part of this specification.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] FIG.1 is a top front perspective view of a first embodiment of the new reversible plate holder in annulus form with generally straight conical walls,

[0021] FIG. 2 is a top front perspective view in section taken along line 2-2 of FIG. 1,

[0022] FIG. 3 is an elevational view in section of FIG. 2 in combination with a large plate or liner,

[0023] FIG. 4 is an inverted view of FIG. 3 in combination with a small plate or liner,

[0024] FIG. 5 is a front elevation view in section of a second embodiment of the new reversible plate holder with curved conical walls and in combination with large plate or liner,

[0025] FIG. 6 is an inverted view of FIG. 5 in combination with a small paper plate, and

[0026] FIG. 7 is a top front perspective view of a third embodiment of the new reversible plate holder with straight walls,

[0027] FIG. 8 is an elevational view in section taken along line 8-8 of FIG. 7,

[0028] FIG. 9 is a top front perspective view in section of a fourth embodiment of the new reversible plate holder,

[0029] FIG. 10 is an elevation view in section taken along line 10-10 in FIG. 9,

[0030] FIG. 11 is a top plan view of a fifth embodiment of the new reversible plate holder, and

[0031] FIG. 12 is an elevation view in section taken along line 12-12 in FIG. 11.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0032] FIGS. 1-4 show a first embodiment 10 of the new reversible plate holder which is formed as an annulus or hollow cylindrical tube which has a top part 12 with a top edge 14 and a bottom part 16 with a bottom edge 18. The top part is formed generally as an inverted and truncated cone 20 whose base of diameter D1 is open at the top. The bottom part 16 is formed also as a truncated cone 22 whose base is open, having diameter D2 corresponding to the bottom edge 18. The wall 24 of the upper cone 20 and the wall 26 of the lower cone 22 are generally straight and are of uniform thickness and extend to meet each other in a central or neck area 28, where walls 24, 26 and 28 form a smooth and contiguous curve.

[0033] FIG. 3 shows the reversible plate holder of FIG. 1 in upright orientation with its large end up in combination with a large paper plate 40 situated on top of and supported by the top end 12 of the plate holder 10. Here the plate 40 has a generally flat bottom 42, tapered sides 44 and an outer rim 46 which may be flat and generally parallel to the bottom 42 or may have a concave curve as shown that overlies top edge 14 of the annulus 10. As shown, the side walls 44 of plate 40 are supported by the side walls 24 of the plate holder 10, and the plate 40 is further stabilized by the fact that its rim 46 overlies and engages the top edge 14 of the plate holder.

[0034] FIG. 4 shows the same plate holder 10 in inverted orientation with the bottom end 16 now at the top and bottom edge 18 at the very top. A smaller plate 50 is shown supported by this bottom end, where the plate has a generally flat bottom portion 52, tapered walls 54 and an outer rim 56 engaged and supported by rim 18 of the bottom end 16, now positioned at the top. Obviously the large or small plate may vary in depth and does not have to engage the end of the plate holder in an exact conforming fit to still achieve a reasonable degree of security and stability. The top and bottom edges 14 and 18 may be treated with a silicone or other substance to enhance frictional contact between the plate holder edge and a table or between the plate holder edge and a plate or liner supported thereon. Alternatively, the plate holder may be made entirely of silicone rubber or other material having a frictional or generally sticky surface.

[0035] In the reversible plate holder as seen in FIGS. 3 and 4, the top side walls 24 extend upward at an angle of about 18° relative to a vertical plane, and the bottom side walls 26 extend downward at an angle of about 20°, with the top diameter D1 being about ten percent greater than bottom diameter D2. These angles may vary along with the heights of the top and bottom parts respectively; however, some standard size plates for which this plate holder is intended, have nominal diameters six, seven and ten inches. The new reversible plate holder can accommodate plates of many different heights, because the conical receiving area will simply engage the portion of a plate's outside circumferential wall surface which corresponds in diameter and height to inside conical wall surfaces of the plate holder. Some plate walls are relatively straight, while others are generally convex. Either can be well supported by the plate holders' inside wall surfaces. Also, while commercially available plates have outer rims that vary in diameter and in curvature or flatness, most of these rims will readily engage and seat on the top and bottom edges 14 and 18 respectively.

[0036] FIGS. 5 and 6 show an embodiment 29 generally similar to that of FIGS. 1-4, but where the inner surfaces 30A, 30C and 30B of the top and bottom conical walls and of the neck respectively define a continuous convex curve. These

walls are of generally uniform thickness, and thus, the outer surfaces 31A, 31B and 31C define a corresponding continuous concave surface. FIG. 5 shows the plate holder in upright position with its top edge 32 supporting a plate, and FIG. 6 shows the plate holder in inverted position with its bottom edge 33, now on top, supporting a plate.

[0037] The curvature as shown may vary, so long as there remain generally conical walls at the top and bottom. This particular embodiment with its smooth and continuously curved inner and outer walls, has an unusual and modern appearance, while still providing all the structural and functional benefits of the basic invention.

[0038] FIGS. 7 and 8 show a further embodiment 60 of the new reversible plate holder where the upper part 62 and lower part 64 define a single conical shape having essentially straight and uniform thickness walls from top 66 to bottom 68. With this plate holder plates of different diameter could be supported at the opposite ends, as shown in connection with FIGS. 1-4. In this embodiment the height and diameter dimension are generally similar to those of the article in FIGS. 1-4, while the overall shape of a simple straight wall is considerably different.

[0039] FIGS. 9 and 10 show a further embodiment 70 of the new reversible plate holder which is a solid base whose outside solid peripheral walls 72 are round with top 74 and bottom 76 respectively. Within the top is a conical recess 78 of a first diameter, and within the bottom is a concentric conical recess 80. This plate holder 70 is reversible by inverting the base similarly as with the plate holder of FIGS. 1-4. The solid walls add bulk and weight which enhances stability regardless of which end is positioned downward.

[0040] FIGS. 9 and 10 are representative of a solid reversible plate holder having opposing co-axial conical recesses as seen in FIGS. 4 or 5, and having any outer shape which may be for example, round, oval, rectangular, square or octagonal that are concentric with the conical recesses, or may be non-concentric therewith. Also, the conical top and bottom recesses are not required to be co-axial.

[0041] In the various reversible plate holders illustrated, if the top and bottom edges are thinner than the width of the plate rim, the rim will readily fit over and engage the edge, tending to center the plate on the edge. Where the edge is wider than the plate rim, the edge will overlie and be supported, but not engage the rim in a manner that tends to center the plate in the recess.

[0042] FIGS. 11 and 12 represent a further embodiment 82 of a reversible plate holder similar to that of FIGS. 9 and 10 except that the outer surface 84 is square. In FIGS. 11 and 12 the side walls are square or rectangular, and the upper and lower truncated conical areas 86, 88 are essentially the same as areas 78 and 80 respectively in FIGS. 9 and 10. Also, the plate holders of FIGS. 9-12 could be hollow instead of solid.

[0043] It should be appreciated that the objects of the invention have been fully and effectively accomplished by the present invention and it will be realized however that the forgoing preferred embodiments have been shown and described for the purpose of illustrating the structural and functional principles of the present invention and are subject to change without departure from such principles. Therefore, this invention includes all modifications encompassed within the spirit of the following claims.